STATE OF NEW HAMPSHIRE

DEPARTMENT OF HEALTH AND HUMAN SERVICES

DIVISION OF PUBLIC HEALTH SERVICES

WEEKLY INFLUENZA SURVEILLANCE REPORT
Week ending March 21, 2009 – MMWR Week 11

The NH Department of Health and Human Services (DHHS) provides weekly influenza surveillance reports during the traditional influenza season, which starts at the beginning of October and goes through mid-May. The 2008–09 influenza season began on 9/28/2008.

Summary MMWR Week 11 Activity

- Influenza-like illness and acute respiratory illness were increased compared to the previous week at 0.9% and 4.4% of patient visits, respectively.
- Pneumonia and influenza-related deaths accounted for 9.3% of deaths, which was below the epidemic threshold of 16.8% for week 11.
- Sixteen new respiratory specimens were submitted for laboratory testing during week 11 and 14 were positive for influenza; six were identified as influenza A (H1), three as influenza A (H3), five as influenza B, and two were negative for influenza.
- NH reported 'widespread' activity for week 11.

New Hampshire Surveillance

Laboratory Surveillance

The NH Public Health Laboratories (PHL) receives respiratory specimens for influenza testing from health care providers and hospitals throughout the State. Testing is important to identify circulating influenza viral subtypes and to confirm specimens that test positive by rapid test.

Results of specimens received by the PHL during week 11 and cumulative totals for the 2008-09 influenza season are presented in the table below.

Table 1: Results of Specimens Received by the PHL during the 2008-09 Influenza Season

	Week 11 (03/22/09–03/28/09)		YTD (9/28/08–03/31/09)	
Results	# specimens	% of total positive	# specimens	% of total positive
Influenza A (H1)	6	42.9	266	68.4
Influenza A (H3)	3	21.4	25	6.4
Influenza B	5	35.7	98	25.2
Negative for influenza*	2		48	
Total	16		440Ψ	

* Includes specimens positive for RSV (2) Ψ Total includes 3 specimens for which results are pending

Outpatient Illness Surveillance

The two components of outpatient illness surveillance in NH are as follows:

1. *U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) (formerly known as the U.S. Influenza Sentinel Provider Surveillance Network)*: Beginning in 1997, NH has participated in this collaborative effort between the Centers for Disease Control and Prevention, state and local health departments, and health care providers. For the 2008-09 influenza season, 35 NH health care providers are participating. Participating

providers report the proportion of patients who present with influenza-like illness (ILI) on a weekly basis. ILI is defined as 1) a fever and 2) cough and/or sore throat, in the absence of a known cause. Participating providers are also asked to collect respiratory specimens from select patients and submit them to the PHL for viral subtyping.

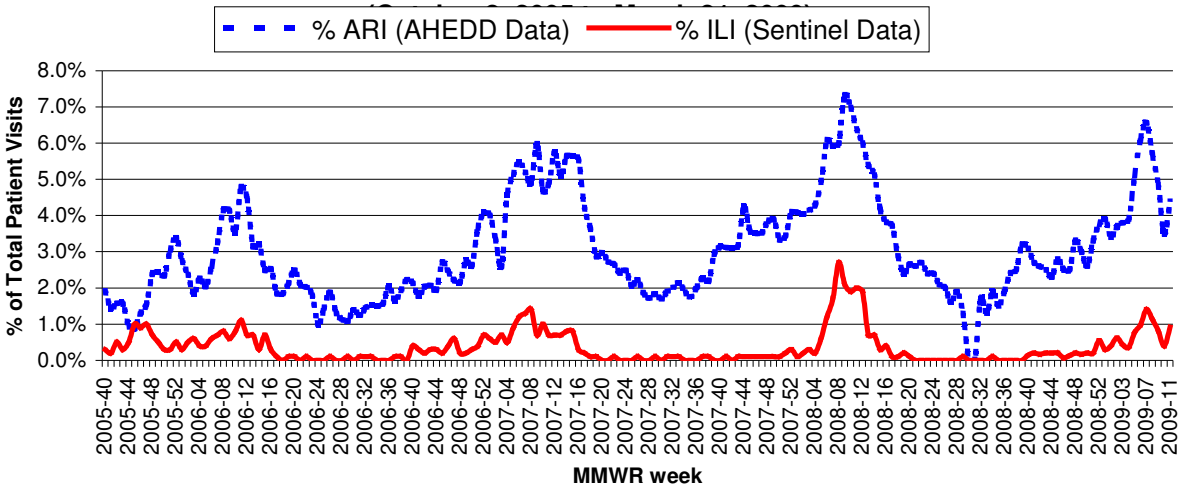
2. *The Automated Hospital Emergency Department Data (AHEDD) system:* This system is a collaborative effort between NH acute care hospitals and the NH DHHS. Currently, 11 hospitals electronically transmit real-time data from emergency department encounters throughout the day to NH DHHS. Chief complaint text within the system is queried for complaints of acute respiratory illness (ARI) in patients seen in emergency departments. While ARI includes encounters that fit the definition of ILI above, it also includes encounters for complaints such as acute bronchitis or otitis media.

Because these two systems collect information using different methods and represent different patient populations, it is expected that the proportions of ILI and ARI seen in these systems will differ. However, the overall trend of activity is expected to be similar.

For week 11 (03/22/09–03/28/09), 0.9% of patient visits to NH ILINet participating providers were due to ILI, based on 18 providers reporting 4,222 patient visits, which is an increase from activity in week 10 (0.7%). In AHEDD for week 11, 4.4% of patient visits to hospital emergency departments were due to ARI, based on 10 hospitals reporting a total of 5,637 patient encounters, which is an increase from activity in AHEDD reported for week 10 (3.5%).

Reported ARI & ILI for 2008-09 and for the three previous seasons is shown in the graph below.

ARI* & ILI Reported through AHEDD and by NH ILINet Participating Providers
MMWR Week 40 2005 to MMWR Week 11 2009



Data current as of 03.31.09

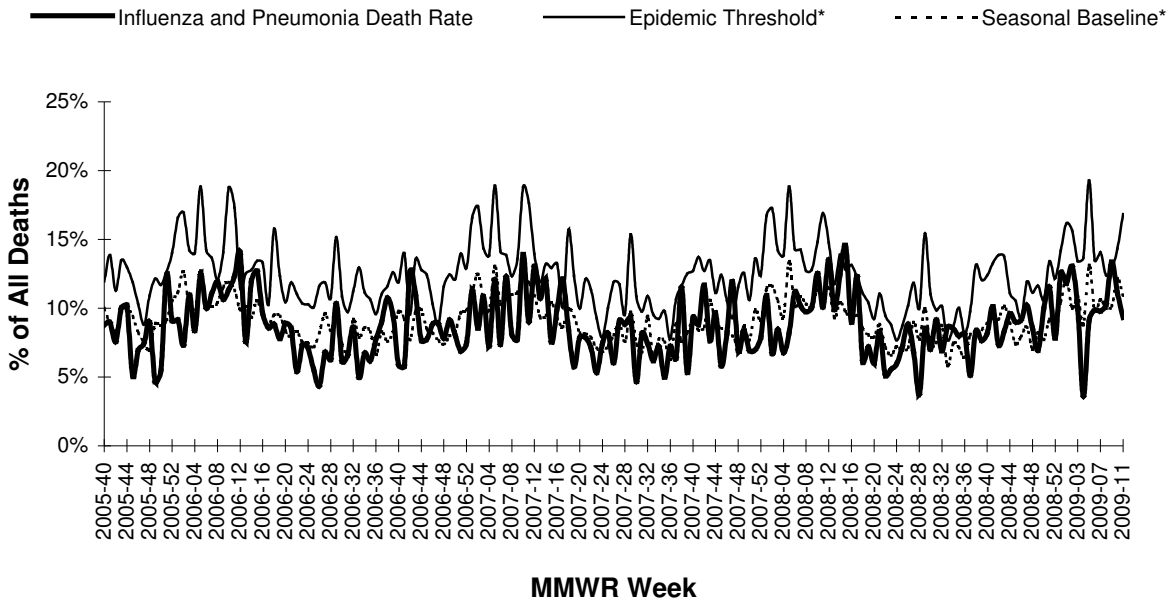
*ARI data not available for MMWR weeks 30 and 31 in 2008.

Pneumonia & Influenza Mortality

Pneumonia and influenza (P&I) deaths in NH are identified through review of electronically filed death certificates by looking at the causes of death listed on each death certificate. The graph below, which shows the proportion of deaths attributed to P&I, represents all deaths recorded by NH's Division of Vital Records Administration. This includes resident and non-resident deaths that occurred within the State, and may not include deaths of NH residents that occurred out-of-state, or cases being investigated by the Medical Examiner's Office.

For week 11 (03/22/09–03/28/09), 9.3% of all deaths recorded in NH were reported as due to P&I. This is below the epidemic threshold for week 11 (16.8%).

Pneumonia and Influenza Mortality, New Hampshire
MMWR Week 40 2005 to MMWR Week 11 2009
(October 2, 2005 to March 21, 2009)



*Seasonal baseline is calculated using the previous 5 years of data. If the proportion of P&I deaths for a given week exceeds the baseline value for that week by a statistically significant amount (1.645 standard deviations), then P&I deaths are said to be above the epidemic threshold, and the proportion of deaths above threshold are considered attributable to influenza.

Influenza Activity as Assessed by State Epidemiologist

Overall influenza activity in NH for week 11 was 'widespread.' Flu activity for week 12 was reported as 'regional,' and will be included in CDC's update for week 12.

Reported flu activity level in NH is based on ILI reported by the participating providers and AHEDD surveillance systems, reported outbreaks in facilities, and reports of laboratory confirmed influenza.

Influenza activity levels are defined by CDC as follows:

- **No Activity:** Low ILI activity and no laboratory-confirmed cases of influenza.
- **Sporadic:** Low ILI activity and isolated laboratory-confirmed influenza cases or a single influenza outbreak has been reported.
- **Local:** Increased ILI activity or influenza outbreaks in a single region of the state, and recent laboratory-confirmed influenza in that region.
- **Regional:** Increased ILI activity or influenza outbreaks in ≥ 2, but less than half of state regions, and recent laboratory-confirmed influenza in affected regions.
- **Widespread:** Increased ILI activity or influenza outbreaks in at least half of state regions, and recent laboratory-confirmed influenza in the state.

National Surveillance

Synopsis: During week 11 (03/22/09–03/28/09), influenza activity continued to decrease in the United States.

- One thousand one hundred four (21.4%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza.

- The proportion of deaths attributed to pneumonia and influenza (P&I) was 7.2%, which was below the epidemic threshold (7.9%).
- Three influenza-associated pediatric deaths were reported.
- The proportion of outpatient visits for influenza-like illness (ILI) was above the national baseline. Six of nine surveillance regions reported ILI at or above their region-specific baselines, including New England.
- Twenty-four states reported widespread influenza activity (including Connecticut, New Hampshire, and Vermont), 19 states reported regional activity (including Maine, Massachusetts, and Rhode Island); six states reported local influenza activity; and the District of Columbia and one state reported sporadic influenza activity.

Laboratory Surveillance:

During week 11 (03/22/09–03/28/09), WHO and NREVSS laboratories located in all 50 states and Washington D.C. reported 5,161 specimens tested for influenza viruses, 1,104 (21.4%) of which were positive: 158 influenza A (H1) viruses, 27 influenza A (H3) viruses, 339 influenza A viruses that were not subtyped, and 580 influenza B viruses.

CDC has antigenically characterized 807 influenza viruses [510 influenza A (H1), 86 influenza A (H3) and 211 influenza B viruses] collected by U.S. laboratories since October 1, 2008.

- All 510 influenza A (H1) viruses are related to the influenza A (H1N1) component of the 2008-09 influenza vaccine (A/Brisbane/59/2007). All 86 influenza A (H3N2) viruses are related to the A (H3N2) vaccine component (A/Brisbane/10/2007).
- Influenza B viruses currently circulating can be divided into two distinct lineages represented by the B/Yamagata/16/88 and B/Victoria/02/87 viruses. Forty-four (20.9%) influenza B viruses tested belong to the B/Yamagata lineage and are related to the vaccine strain (B/Florida/04/2006). The remaining 167 (79.1%) viruses belong to the B/Victoria lineage and are not related to the vaccine strain.

Since October 1, 2008, 554 influenza A (H1N1), 86 influenza A (H3N2), and 258 influenza B viruses have been tested for resistance to the neuraminidase inhibitors (oseltamivir and zanamivir). Five hundred fifty-four influenza A (H1N1) and 86 influenza A (H3N2) viruses have been tested for resistance to the adamantanes (amantadine and rimantadine).

Table 2: Results of Antiviral Resistance Testing at CDC during the 2008-09 Influenza Season

	Isolates tested (n)	Resistant Viruses, Number (%)		Isolates tested (n)	Resistant Viruses, Number (%)
		Oseltamivir	Zanamivir		Adamantanes
Influenza A (H1N1)	554	549 (99.1%)	0 (0%)	554	3 (0.5%)
Influenza A (H3N2)	86	0 (0%)	0 (0%)	86	86 (100%)
Influenza B	258	0 (0%)	0 (0%)	N/A*	N/A*

*The adamantanes (amantadine and rimantadine) are not effective against influenza B viruses.

For more detailed information, CDC's weekly influenza surveillance report can be found at http://www.cdc.gov/flu/weekly/.

Because of increased resistance to oseltamivir seen in tested influenza A (H1N1) viruses to date, CDC has issued updated interim guidance for the use of antiviral medications during the 2008-09 influenza season available at: http://www.cdc.gov/flu/professionals/antivirals/index.htm